

3) Calculate the probability of each event below:

- Rolling two dice and getting sum of either 3 or 11.
- Flipping 3 coins and getting exactly 2 heads.
- A bag contains 2 yellow marbles and 5 red marbles. Two marbles are drawn at random. One marble is drawn and not replaced. Then a second marble is drawn. What is the probability that the first marble is red and the second one is yellow?

(a)

$$\frac{1}{3}$$

$$\frac{1}{9} = \frac{4}{36}$$

D1
1
2
6
5

D2
2
1
5
6

$$\left(\frac{1}{6} \cdot \frac{1}{6}\right) 2 + \left(\frac{1}{6} \cdot \frac{1}{6}\right) 2$$

$$\frac{2}{36} + \frac{2}{36} = \frac{4}{36} = \frac{1}{9}$$

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

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b) $\frac{1}{4}$
 $\frac{1}{3}$
 $\frac{3}{8}$

	Coin 1	2	3
good {	H	H	T
	H	T	H
	T	H	H
	T	T	T
	H	H	H
	T	T	H
	H	T	T
	T	H	T

$$\left(\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \right)^3 = \frac{3}{8}$$

